1: Jenness--14 (1913-16) 1922 Copper Eskimo
116, 137

"Reindeer moss (1) is abundant in the valleys of most of these rivers, which are therefore favorite haunts for the migratory caribou. Practically the whole of the country lies beyond the northern limit of trees; there are only two places, in fact, where timber is found, viz. in the valleys of the Tree and of the Coppermine rivers, for which reason these two possess a peculiar economic importance. (2) Occasional beds of willow that grow to a height of five or six feet appear as veritable forests among the prevailing heather and moss and grass and tiny flowering plants a few inches high with which the greater part of the country is covered. The driftwood that is found here and there on the sea-shore would be far more valuable to the natives than this scanty vegetation, did not the heather supply them with fuel during the summer months; and the caribou and musk-oxen find sustenance in the moss and grass where man finds none."

"1. Reindeer 'moss' is the name popularly applied to various species of lichen, Cladonia, and other allied genera."

"2. A small river, the Napaktauktuak, a few miles east of the Coppermine, is said to reach back to timber. The Dease river, though it flows into Great Bear lake, may be considered for our purposes to lie in the basin of the Coppermine, since it is only accessible to the Eskimos by way of the latter."

1: Jenness--20 (1913-16) 1922 Copper Eskimo
116, 137

"On the Coppermine itself timber comes to about twenty miles from the mouth, but the trees there are small and stunted and consequently neither in size nor in easiness of being worked are they adaptable for use by the Eskimos. From that point on up the river, trees are frequently met with and in places they attain considerable size. In the valley of the Kendall river, which connects Dismal lake with the Coppermine, there is abundant timber, and at the east and west ends of Dismal lake there is a small amount. The balance of the shore of Dismal lake is said to be destitute of trees except for a small clump in a cirque-like basin near the 'Narrows.' Lake Rouvier has abundant timber on its north side. It was her that Fathers Le Roux and Rouvier had their house. The main valley of the Dease is well timbered, especially as Great Bear lake is approached. In all of this country the timber is confined to the immediate vicinity of the river or lake valley; the surrounding hills and plains are a part of the 'Barren lands.'"

1: Jenness--56 (1913-16) 1922 Copper Eskimo
116, 313, 137

"Materials from which to construct a dwelling are very limited among the Copper Eskimos. There is no standing timber anywhere along the coast, and the shores are almost bare of drift-wood. To obtain the wood they need for sleds and household furniture the natives must travel south for many days far into the interior. It is true that a little spruce still grows within thirty and even twenty miles of the coast in the valley of the Coppermine river, but it is all too small and stunted to be of any great value. The natives at the western end of Coronation gulf obtain their timber from the neighbourhood of Great Bear lake, while the eastern people often travel down to the Akilinnik river for the same purpose, though the journey takes them half the year."

2: Stefansson--20 (1908-1912) 1914 Copper Eskimo
116, 133, 137

"The country between the 118th meridian and Coronation Gulf can scarcely be called mountainous but rather high, hilly, and rocky. There is an abundant vegetation of grasses, mosses, and lichens in the low places, but the high hill tops are in many cases barren on account of their rocky character. There are some rivers of size, but the details of them are unknown to us except that we were told that Rae River heads in an oval-shaped lake, apparently about twenty miles long that lies south of Staypleton Bay which, by the way, is not nearly so deep a bay as the maps indicate. There are commonly the smallest of dwarf willows said to be found anywhere north of the Rae River, and that river itself is not well supplied, but the Richardson River which has its mouth just south of that of the Rae has, we were told, considerable growth of willows in its valley and this we verified through finding heaps of drift willow at its mouth."

"DRIFTWOOD

"As pointed out above in the discussion of the prevailing winds, those coasts west of Coronation Gulf which face north are better supplied than the southward facing coasts. Coming east from Cape Lyon we found the driftwood gradually diminishing as we went east, but not nearly so fast as we had expected. Logs of considerable size clearly derived from the Mackenzie River are numerous well beyond Inman River, but when we come as far east as Cape Bexley mostly broken sticks are found and it would be difficult to get together on a small stretch of beach large logs of considerable size such as would be needed, for instance, for the construction of a log house. The beaches, however, are mostly composed of broken rock and for that reason all the wood there is dry and has been preserved from rotting. There is no doubt that if the Eskimo of this country are ever taught the use of sheet iron stoves as the Western Eskimo have been, the supplies of wood [43] which now are sufficient so that a traveling party can camp almost anywhere and find enough for fuel, will disappear in a few years and it will be found then that the replenishing will be a slow process for the piles of driftwood that make such a brave showing now have clearly been gathering here for centuries."

"In many of the river valleys of Alaska and of the neighborhood of the Mackenzie, there is a growth of very heavy willows which serves the natives for fuel. This is not so general in the district of the Copper Eskimo. Small willows are found both on Banks Island and Victoria Island, but there seems to be only one place in Victoria Island where the willows attain a considerable growth. This is the valley of the Kagloryuak River which falls into the east end of Prince Albert Sound. We did not see these willows, but we were told that what there were of them, grew crooked and never stood quite as high as a man's head.

In the valley of the Coppermine the growth of willows is very small north of the tree line, and on Dismal Lake where there are trees both at the east and the west ends of the lake, the middle section of the lake shore is supplied with willows that are only of a size corresponding with the descriptions we have from Victoria Island.

In ascending the Coppermine, the first week of June, 1910, we found a dozen shoots of spruce not more than three or four feet high growing a mile and a half north of Bloody Fall, or not over four miles from the ocean in a direct line. It may be considered, however, that the tree line of the Coppermine is, as measured along the river, nine or ten miles south of Bloody Fall, or in an air line, perhaps fifteen miles from the ocean. Just east of the Coppermine there is, however, a small patch of trees on the head of a little creek. These trees are no more than seven or eight miles from the

ocean. As one proceeds up the Coppermine, trees appear in irregular patches not so much in the valley of the river itself as in the valleys of its tributaries, [sic] Along the east side of the river we found that north of the mouth of the Kendall, the spruce nowhere extends more than about ten miles up any of these creek beds, and on the west so far as we could judge by looking across from hill tops with our field glasses, the woods are even more closely confined to the river. Just north of the mouth of the Kendall we crossed from the east to the west bank and found that not only is the Kendall Valley itself densely wooded all the way to Dismal Lake, but the higher lands to the north of it are also banked with scattered groves of spruce. Dismal Lake is about thirty-six miles long and is curved as shown on Hanbury's map and not a chain of lakes as described by Dease and Simpson and shown on most of our [45] maps and charts. There is considerable growth of spruce around the east end of the lake for the first five or six miles from its outlet, and then for about thirty miles it is flanked on either hand by Barren Ground, but there is a dense grove of trees at a creek mouth at the southwest end of the lake. Crossing here and descending south into the valley of the Dease, it is only a matter of a mile or so from trees on Dismal Lake to the trees of the Dease Valley which run continuously down to the northeast corner of Bear Lake.

South of Dismal Lake there is, however, what amounts to an island of Barren Ground surrounded as it is by the woods of Dismal Lake, Dease River, Great Bear Lake, and the Coppermine. It is on the high hill tops of this rocky section, that the Eskimo chiefly

camp in summer.

It is commonly supposed, no doubt from the knowledge of Greenland, that most of the Arctic Islands are covered with an ice cap. This is so far from being true that so far as I know, there is not a vestige of a glacier anywhere either in Victoria or Banks Island and they are everywhere covered with green grass and flowers, except in districts that are too rocky for plant growth."

10: Hanbury--276-277 (1901-02) 1904 Copper Eskimo-1-3
116, 137

"FLORA OF THE ARCTIC COAST OF NORTH AMERICA: OGDEN BAY TO COPPERMINE RIVER (100°-115° W. Long.)

Collected by DAVID T. HANBURY, 1902. Determined by R. A. ROLFE, A. L. S., of the Royal Gardens, Kew.

Anemone parviflora, Michx.
Caltha palustris, L.
Papaver alpinum, L.
Parrya arctica, R. Br.
Cheiranthus pygmaeus, Adams.
(Hisperis Pallasii, Torr & Gray.)
Cardamine pratensis, L.
" digitata, Richardson.
Draba alpina, L. variety with bright yellow flowers.
Draba alpina, L., variety with
(Phaca aboriginorum, Hook.)
Hedysarum boreale, Nutt.
Astragalus sp. nova?
Oxytropis campestris, L.
" nigrescens, Fisch.
Dryas integrifolia, L.
Potentilla biflora, Willd.
" nivea, L.
" " var.
" *fruticosa, L.
Saxifraga cernua, L.

*Not included in Arctic North-Eastern America in Hooker's 'Distribution of Arctic Plants.'

pale yellow flowers.
Draba incana, L.
Erysimum lanceolatum, R. Br.
Silene acaulis, L.
Cerastium alpinum, L.
Stellaria longipes, Goldie.
Arenaria Rossii, R. Br.
" peploides, L.
(Honkeneja peploides, Ehrh.)
Lupinus nootkatensis, Donn.
(L. perennis, Hook., not of Linn.)
Astragalus aboriginum, Richardson.
Ledum palustre, L. forma decumbens.
Rhododendron lapponicum, L.
Pyrola rotundifolia, L.
" Hirculus, L.
" oppositifolia, L.
" tricuspidata, Rottb.
Epilobium latifolium, L.
Aster sibiricus, L.
Matricaria inodora, L.
(Pyrethrum inodorum, Sm.)
Arnica mohtana, L., var. angustifolia.
Senecio palustris, L.
Taraxacum officinale, Wigg.
Crepis nana, Richardson
Cassiope tetragona, L.
Andromeda polifolia, L. [277]
* Pedicularis capitata, Adams.
" hirsuta, L.
" sudetica, L.
Pinguicula vulgaris, L.

* Not included in Artic North-Eastern America in Hooker's 'Distribution of Arctic Plants.'

10: Hanbury--276-277
116, 137

(1901-02) 1904

Copper Eskimo-3

* Primula farinosa, L.
Armeria vulgaris, L.
Mertensia maritima, S.F. Gray.

Oxyria reniformis, Hook.
Woodsia glabella, R. Br.

* Not included in Arctic North-Eastern America in Hooker's 'Distribution of Arctic Plants."

CHAPTER I

MATERIAL RESOURCES

Few people have been called upon to sustain life and perpetuate their race on such meagre resources as the Copper Eskimo. Even if they had been acquainted with agriculture the climate debarred it, just as it debarred the growth of trees except in two or three sheltered valleys along the southern fringe of their territory. It restricted not only the flora but the fauna, leaving the natives dependent for their food and for much of their equipment on one land animal, the seasonally migrating caribou, and two sea mammals, the foetid and the bearded seals, supplemented by such fish as they could capture in rivers, lakes, and bays. Ignorant of all metals except their native copper, which seemed to them only a malleable stone, and cut off from contact with any but neighbouring tribes, little or no more advanced than themselves, they had to build up their lives on the scanty resources provided by their own narrow environment, and rely on their own ingenuity to supply all their needs.

The resources provided by their environment fall naturally into four groups:

Wood
Stone (including native copper and other minerals)
Bone, antler, horn, ivory
Hides and sinew.

WOOD

The Copper Eskimo obtained their wood from two sources. First, there was the driftwood, mainly spruce and cottonwood, carried to the ocean by Mackenzie River far to the westward and borne by the winds and currents to Dolphin and Union Strait and western bays of Victoria Island. Then in the valleys of three rivers that flowed into Coronation Gulf, Coppermine, Napaktauktauk, and Tree, there stood scattered groves of spruce, small and stunted, a few miles from the coast, but larger as one proceeded south. Far to the southeast, too, near Thelon River, were other stands of spruce that the Eskimo from Bathurst Inlet and from the eastern shores of Victoria Island occasionally visited in their wanderings. Thus the Copper Eskimo had abundant wood to satisfy all their needs; but as driftwood was very scarce in many districts, and the standing timber on the southern fringe of their territory could be reached only after a long journey overland, which many natives were disinclined to make, manufactured objects of wood were among the commonest articles of trade and passed freely from one end of the territory to the other. Moreover, so crude were the Eskimo tools, and so great the labour of cutting down the trees and hewing the timber into shape, that any object of moderate size, such as a sled-runner, a table, or even a tent-pole, commanded a high price.[1]

The principal tools used in working wood were the adze and the whittling knife (*See* pp. 100 and 103). Bone or antler wedges, generally made for each occasion and immediately discarded, served to split small logs and planks; they were driven home with boulders. Lacking saws, the Eskimo shortened a plank in one or other of three ways: they hacked it with the adze; gouged it across with the grooving tool (*See* p. 100); or they drilled a line of holes across it with the bow drill.

[1] Cf. Stefansson, V.: The Stefansson-Anderson Arctic Expedition: Anth. Papers, Amer. Mus. of Nat. Hist., vol. XIV, pt. I, pp. [illegible], New York, [illegible].

Hough again, in his well-known memoir,[1] distinguishes three kinds of Eskimo lamps on the basis of their use, viz. the house lamp, the travelling or summer lamp, and the mortuary lamp, the latter frequently being models.

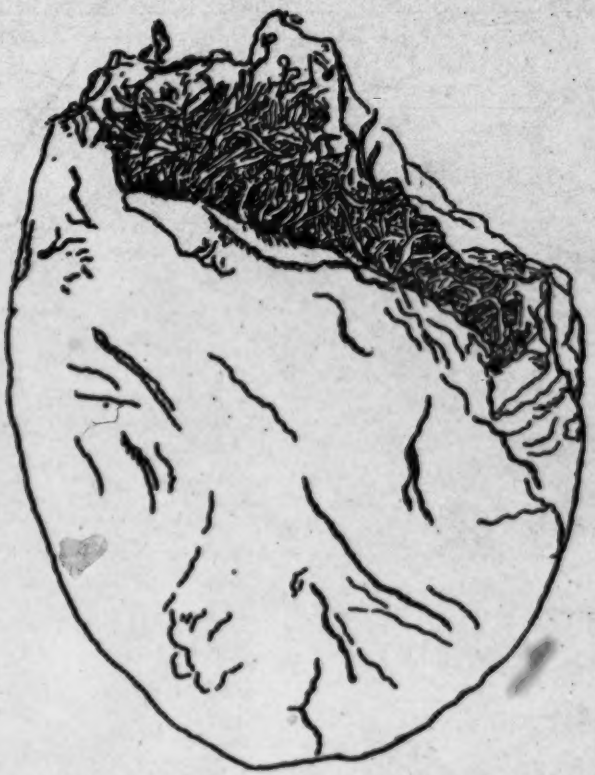

Figure 48. Bag for dry grass, made from the lining around an animal's heart. IV.D.328. 1/1.

Neither of these statements is quite correct when applied to the Copper Eskimo. They had lamps of every size, from 2 or 3 inches long up to 30 inches; and small vessels 8 or 12 inches long were as common as lamps of 30 inches. From June to September or October, when most of the snow had melted from the land and the families were scattered in search of fish and caribou, the natives generally cached their lamps with the sleds on the seashore or on the margins of lakes, and used for fuel dwarf willow, heather, *Dryas integrifolia*, and other plants, instead of blubber. Consequently, they had no special summer lamp. But because their ordinary lamp seldom functioned during the summer months we cannot say with Porsild that it had lost its importance as a heater. It still remained the indispensable prerequisite of existence during two-thirds of the year for heat as well as for light.

[1] Hough, Walter: Ann. Rept. Smith. Inst., U.S. Nat. Mus., 1895, p. 1003.

354 two or three stones supported the lamp; and on short winter journeys, when the
352 lamp served only for light, it was simply placed on a block of snow. As already stated, it was seldom employed during the summer months.

354 Unlike nearly all Eskimo tribes the Copper Eskimo seldom or never used
824 moss for the lamp-wick, but substituted the seeds of the cottongrass, *Eriophorum*
824 *angustifolium*, or, more rarely, the catkins of the dwarf willow, either of which
[134] gave a more smokeless flame. *Eriophorum angustifolium* matures about the
[237] beginning of September, and it was at that season the women gathered the
[415] seeds into small bags made of loon skin, marmot skin, or other convenient material. They gathered a large supply, as in midwinter the wick needed daily renewing; and they deferred the separation of the seeds from the stalks until leisure moments in camp.

354 *Lighting and Tending the Lamp.* The Copper Eskimo lighted and tended
372 their lamps in the same way as the Eskimo of Smith Sound[1] except that they
237 did not chew the blubber and spit it into the lamp. The housewife took out
462 of a sealskin poke two or three stripe of blubber a foot or more long by
[191] several inches wide, and with a specially designed hammer of musk-ox horn (See Figure 63) pounded them on the table to break up the cells.[2] She then laid them in the well of the lamp, when a little oil began at once to accumulate
[824] on the bottom, unless the weather was extremely cold. In this oil she soaked her eriophorum seeds, and arranged them along the lip of the lamp in a continuous line so that their lower edges touched the bottom of the well (or at least dipped into the oil that shortly accumulated), and the upper edges projected about a quarter of an inch above the rim. To light the wick she pinched it up into little points 2 or 3 inches apart, which readily caught fire from the torch; and by patting up adjacent parts of the wick with her lamp-trimmer she quickly produced a continuous smokeless flame rising to a height of about three-quarters of an inch. As the heat melted the oil out of the stripe of blubber, she removed them to the back shelf of the lamp until they drained; then, later, she threw them to the dogs. Sometimes, if the lamp already contained a certain quantity of oil, she placed fresh stripe of pounded blubber on the same shelf instead of in the well, so that the oil would not accumulate too rapidly and drip over the outer edges of the lamp. The Copper Eskimo had no device for melting the blubber on a stick or shelf, such as was common in both the eastern and western Arctic.

354 Hough[3] says that lamp-trimming "only reached perfection in the old women
462 of the tribe, who can prepare a lamp so that it will give a good, steady flame for several hours, while usually half an hour is the best that can be expected." This is not true of the Copper Eskimo. There, the women naturally have more experience than the men, and on the average are more skilful, but many a hunter can tend the wick just as successfully as his wife. A lamp is seldom allowed to smoke; one of the inmates, be it the man, his wife, or even one of the children, is sure to notice it and pat down the wick.

354 The same writer states in another passage[4] that "the lamp and the pot
415 usually agree as to size, the rule being that the length of the pot shall be equal
[191] to the length of the wick edge." Among the Copper Eskimo, as in Smith Sound and, I believe, elsewhere, the sizes of the two vessels bear no direct relation to one another. For obvious reasons the wick edge of the lamp should be no shorter than the bottom of the pot; but it may be, and often is, much longer, for with her lamp-trimmer the housewife can readily adjust the flame to whatever length she desires.

[113] [illegible]

[illegible]

The lamp-trimmer mentioned several times above was in most cases merely a pencil of wood varying in length from 6 to 18 inches, generally flattened at one end and smoothed. Any small stick, whether of wood, bone, or antler, sufficed in an emergency; I have even seen a man use his knife. The stone (soapstone or asbestos) pencils, often employed in West Greenland and in Hudson Bay,[1] seem to have been unknown to the Copper Eskimo. Unknown, too, were the drip-stands of Alaska, Greenland, and other places. The Coronation Gulf soapstone is not porous as the Greenland soapstone is said to be[2]; and though oil might frequently drip over the edges, it never seeped through the vessel itself. 354 412 [135]

Every household employed torches for lighting extra lamps, for searching the corners of the hut, and particularly for conveying fire from one snow-hut to another. Occasionally a woman used the lamp-stick or even raw lamp-wick, but she always kept for the purpose four or five bunches of matted moss roots that she had collected and dried in the late summer (Figure 47b). Such a torch, dipped in the melted blubber, would burn several minutes, though if carried outside in windy weather it had to be shielded inside a bag or bucket. It was a common sight after a day's march to see the women carrying torches from one hut to another in order to relight their lamps; the first lamp, of course, was lighted with pyrites. 416 [824]

In summer, when the lamp was discarded, the Eskimo carefully extinguished their open-air fires with flat stones in order to reduce the burning wood to charcoal, which readily took a spark on some future occasion and could be kindled into a flame with the breath. In blowing the fire they did not purse their lips as we do, but curled the tongue along the lower palate into a half-cylinder that directed the breath along a narrow path. When carrying glowing coals from one tent or cooking place to another the women usually wrapped them in bunches of dry heather or *Dryas integrifolia*; where no coals were available they used the heather or dryas alone. 372 [824] [137]

POTS

The Back River Eskimo commonly made their cooking pot from five flat slabs of limestone cemented together.[3] Among the Copper Eskimo we saw none of this type, only pots carved from solid slabs of soapstone. Theoretically these pots should have received two forms, one adapted for cooking over the blubber lamp in winter and the other for use over an open fire during the summer months. The pot for use with the blubber lamp should have been a long, oblong vessel, rather narrow, because the flame of the lamp was a long, narrow line; it should have been comparatively deep to hold large pieces of seal and caribou meat; and it might have had considerable dimensions and weight, as it was always carried on the sled during the winter and spring months. The pot for use over an open fire in summer should have been less narrow, and altogether smaller and lighter, because at that season all the household furniture had to be carried on the back. 415 [171] [324] [252] [493] [482]

In actual fact both types existed among the Copper Eskimo, but the longer, narrower form adapted for use over the blubber lamp was far more generally used, as winter conditions prevailed during 8 months of the year. The pot was nearly always rectangular in outline, though one saw occasional specimens of trapezoid form. The corners were sharp, almost at right angles, the sides slightly convex in outline and sloping inward towards the bottom, making the vessel widest and longest at the top; the convexity in the sides was occasionally marked. In large pots there was a tendency for the depth to vary inversely with the breadth, so that the narrower vessels were likewise the deepest. 113

[1] Parsfield, M.: Op. cit., p. [illegible]. Thalbitzer, W.: The Ammassalik Eskimo; Meddelelser om Grønland, vol. XXXIX, p. [illegible] (Copenhagen, [illegible]).
[2] Birket-Smith, K.: Ethnography of Egedesminde District; Meddelelser om Grønland, vol. LXVI, p. [illegible] (Copenhagen, [illegible]).
[3] Chief Factor James Anderson's Back River Journal of [illegible]; Can. Field-Nat., vol. LV, 2, [illegible], p. [illegible].

29: Jenness E-5 (1914-1916) 1959
ND8 Copper Eskimo ND8

sion, but hitherto we had not been able to report our safe arrival at Bernard Harbour and the progress of our scientific work. The first three months of the year, it is true, are not the most favourable for travelling; the days are short, the weather stormy, and the snow, away from the coast, both soft and deep. But even if he were unable to reach Fort Norman, the constant travelling would harden the dogs for their strenuous work in the long, mild days of spring; and the problem of feeding them would really be simplified, since caribou abounded in the valley of the Coppermine River throughout the winter, whereas at Bernard Harbour we had to purchase seal meat from the Eskimos. All things considered, it seemed advisable to undertake the journey. The seaman, Castel, was an efficient companion who could easily be spared from the station; myself and the Eskimo Palaiyak could form a supporting party to freight some of the supplies part of the distance and to establish caches of food against their return; and Johansen could accompany us in the hope of doing some biological work among the spruce forests of the Coppermine Valley.

February 2 arrived, the date set for our departure. About 8 A.M. a bluish tinge began to creep over the snow. It grew perceptibly brighter until we could distinguish the dark shore-line of the harbour, and the island that barred the entrance. In the distance the Liston and Sutton Islands appeared as a thin black

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as a notable landmark in the otherwise featureless shore-line. Farther east was a low stone monument set up by Sir John Richardson's party nearly seventy years before, although from its appearance it might have been standing but a few months. Time's ravages work slowly in the Arctic; M'Clintock's expedition to Melville Island in 1853 discovered hardly a trace of moss on the tracks of Sir Edward Parry's carts that had passed over the tundra in 1820.

We encountered our first caribou in Richardson Bay, near the mouth of the Coppermine River, where a herd of about a hundred were grazing on a ridge overlooking the frozen sea. Anderson and Palaiyak pursued them and shot three. We cached part of the meat under the largest boulders we could find; but since the wolverines would dislodge a stone that two of us could hardly lift, we covered the boulders with snow, and converted the snow into ice by pouring water over it. We hoped by this means to outwit the crafty animals and preserve a small stock of meat for Anderson's return journey. But they proved too much for us; they tunnelled under the surrounding snow and entered the cache from below, as we discovered a fortnight later.

Every hunter in the North develops a taste for the marrow in the leg-bones of the caribou; so it was not surprising that Anderson, Johansen, and myself, sitting round the camp-stove that night, should pile two dozen bones in our midst, and proceed to crack them on stone

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anvils with our hunting-knives. Anderson then became strangely reminiscent, and related droll stories of his college days, of the Spanish-American War, and of his experiences on a former expedition to the Arctic. Suddenly he stopped, and Johansen and I returned to the marrow-bones. Nothing remained but fragments. I could account for four bones only, Johansen for only two; Anderson himself had slyly demolished the other eighteen. In fairness, however, I should add that he has always denied the accuracy of these figures.

The long, winding Coppermine enters the sea by two mouths, which are separated from one another by a low, grass-covered island capped with two diabase hills at its northern end. The river is here about three miles wide, but immediately narrows down to a few hundred yards. We encountered nothing but smooth ice for the first ten miles, so smooth that the snow had blown off it in many places. The dogs soon lost their tempers here, for they slid over the ice in all directions when the toboggans stuck fast on the tiniest snow-patch. Steep mud-banks hemmed us in on either side, sloping back to a level plateau in a series of cone-shaped pyramids. We came upon willows growing as high as seven or eight feet, the nearest approach to trees that any of us had seen for many months; and we passed two deserted snow-houses erected by some Eskimos returning from the Dismal Lakes early in the winter. Just as darkness began to close in we pitched our tent

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his ankles; but the dogs floundered up to their bellies at every step, and buried their tails between their legs as they wearily dragged the toboggans up and down the ridges.

Two days of this travelling brought us to a grove of medium-sized spruce trees in the sheltered valley of a small stream not far from the Sandstone Rapids. We were then about forty miles from the mouth of the Coppermine, and a hundred and thirty from Bernard Harbour. The north-east corner of Great Bear Lake was less than a hundred miles away, and if Anderson once reached the lake the worst part of his journey would be over, even though Fort Norman lay twice as far beyond. Johansen's goal was the forest in which we had now camped, so he and his toboggan would go no farther.

We lingered a day near the Sandstone Rapids to reorganize the loads and repair a tent that the dogs had torn. Anderson, Castel, and I then pushed on ten miles to another grove of spruce trees surrounding a tiny lagoon. The Coppermine was half a mile to the westward, and the Kendall River flowing out of the Dismal Lakes entered on the opposite bank. We tried hard to reach it before dark; but three steep ridges separated the lagoon from the Coppermine, and Anderson's heavy toboggan failed to surmount the first of them, though I carried three hundred pounds of his load on my sled. He decided to camp in the grove for

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000 the night and renew the attempt next day, freighting his supplies in two relays. When I left them in the morning he was confident of crossing the river before noon; but so steep were the ridges, and so deep the snow, that they laboured for two days before reaching the nearer bank.

Meanwhile, at our old camp in the first grove of spruce trees, Johansen was greatly elated by an unexpected discovery. He told me, when I returned, that he had solved a problem that had baffled every traveller on the Coppermine from the days of Richardson to our
• 137 own. East and west of the river stretch the barren
[133] grounds, stony or mossy, according to the varying conditions, but nowhere adorned by a single tree except the creeping dwarf willow. The tree-line follows the valleys, and on the larger rivers runs nearly out to the coast. On the Coppermine the most northerly stand of timber lies in the valley of a small creek six miles from the sea and three or four miles from the actual river-bed; south of this, groves of spruce, mingled with a little cottonwood, appear at intervals of every mile or two, the groves becoming larger, and the trees bigger, as one travels upstream. All the bigger trees in the northernmost groves are dead, and many of the smaller ones have dead and withered branches, so that the timber-line seems to be moving southward. Richardson attributed this movement to fires kindled by wandering bands of Eskimos, but the

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botanists were never quite satisfied with his explanation. Johansen now offered a different one. By cutting into the trees he had discovered many dead beetles and their larvæ, even a larva still living. Three or four genera were represented, all known to be a menace to our northern forests, since they sap the strength of the larger branches. The beetles had themselves been killed by abnormally cold weather; but it seemed certain that they, and not fires, were responsible for the destruction of the timber and the recession of the tree-line. Johansen had good reason to be elated at his discovery.

We stayed two days longer in the grove to enable him to continue his researches. Palaiyak went caribou-hunting, for three men and twelve dogs will consume a whole carcass in one day. I spent most of the time cooking the meals, attending to the dogs, and performing the other routine duties incident to camp life. The temperature had fallen as soon as we left the coast, and our mercury thermometer froze at —51° F.; but the atmosphere was calm and dry, and the cold caused us little inconvenience. A brilliant display of parhelia illumined the dark spruce trees that rose straight out of the white snow, and the landscape was surprisingly beautiful after the barren monotony of the sea-coast.

The second afternoon I wandered down to the river to watch the clouds of vapour steaming up from the

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the day, and its light was doubled by reflection from the snow. So man, like the animals, changed his colour with the season. The faces of the Eskimos during the dark days of winter had been as fair as an Englishman's; now they were tanned to the deep rich brown of a southern European. One or two appeared to be darker still, but I strongly suspected that they could be appreciably lightened by a liberal application of soap and water.

Ikpuck and I conveyed his blubber pokes to a small island three miles off the coast, where we covered them with boulders to protect them from sea-gulls and foxes. The sea-gulls were easily deterred, but only a well-built cache could keep out the foxes, which worm their way into the smallest crevices. Before open water cut off communication with the shore, however, all animals would leave the island, and nothing could disturb our pokes throughout the summer.

Continual sealing began to pall on the Eskimos when the safe disposition of their blubber removed the last excuse for lingering on the sea-ice. The long winter had come to an end, and the midnight sun was shining over their heads. They forgot the monotonous hours of confinement within the dimly lighted huts, when the blizzards raged outdoors and the twilight of noon resembled night rather than day. The earth was awakening to life again after its long sleep. Ducks and loons flew overhead, the ptarmigan in the valleys

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CHAPTER VII

IN QUEST OF THE TORMIAT

133 VICTORIA ISLAND terminates to the west in a long and wide peninsula, to which early maps gave the name of Wollaston Land. Low hills averaging about 800 feet high form the backbone of the peninsula, and many large streams flow radially north and south out of the innumerable lakes that fill the valleys and depressions among the ridges. A thick layer of mud covers the greater portion of the land, but near the coast-line are cliffs of dolomite through which the streams have carved deep gorges.

137 Not a tree rises anywhere. Mosses and lichens carpet the margins of the lakes, and here and there on the coastal plain grow patches of heather and dwarf wil-

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were seeking out their mates, and a faint tinge of green had crept into the brown tips of the low dwarf willows that protruded above the snow. In the hills lay countless lakes teeming with trout and salmon, and herds of caribou grazed on the slopes and plains. Soon large pools would form around the margins of the lakes, and the unlocked waters race in foaming torrents to the sea. Everything beckoned us landward, to a joyous life in the open air. There would still be a few more snow-storms, succeeded by fogs and rain; later, dark clouds of mosquitoes would assail us night and day without rest. But there would be many days, too, of mild, clear weather when we could sleep beneath the open sky; and food was abundant everywhere, so that we could roam where we pleased, as free and unfettered as the caribou we hunted.

On May 9 our sleds climbed up the shore near the mouth of a large creek named Okowyarvik. The new life had begun.

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low; but the hills are brown and barren, or sparsely clothed with a few creeping plants such as dryads, saxifrages, and oxytropi.

On this peninsula I planned to live six months, isolated with my little band of Eskimos. The life on the ice was ended; fishing and caribou-hunting were to be our sole pursuits. As Ikpuck's adopted son I could observe all the details of Eskimo summer life, following its variations from day to day as no traveller had done before me. It was for this purpose, indeed, that I had cut myself adrift from the rest of the expedition until the winter, when the strait would freeze over again and allow me to return to Bernard Harbour. In the back of my mind lay also another plan. Sixty miles to the northward was Prince Albert Sound, the home of an Eskimo tribe that I had not yet visited. Each summer a few of the Sound people met and traded with Eskimos from Dolphin and Union Strait somewhere in the interior of Wollaston Land, and Ikpuck, who was born in this region, promised to guide our party to their usual places of rendezvous. He arranged that we should travel first to the Lake of Dancing within the Colville Hills; later, if necessary, to the Big Lake across the divide or to Prince Albert Sound itself.

We had landed near Okowyarvik Creek, which flows into a long, narrow harbour sheltered from every gale by an island that extends across its mouth. It was the

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usual starting-point for Eskimos travelling to the Great Sound, since the hills immediately north were lower than at any other place either to east or west. Okowyarvik means "the Home of the Dryad," not the wood-nymph of that name, who could never find a home in this desolate land, but the *Dryas integrifolia*, a tiny flowering plant distantly related to our rose. The Eskimos generally paid little attention to the plants around them because they added nothing to their food supply; but the dryad, heather, and willow furnished their fuel during the summer months, and in the hills heather and willow were not procurable.

We lingered a week at "Dryad Harbour," for the season was still early and the snow that covered the land would last another month. While the men were hunting caribou the women overhauled their bags of clothing, putting aside all the heavier garments not needed again till winter. To these they added the furniture of the snow-huts, the long wooden tables, the drying frames, and a few of the stone lamps. Each family made a separate pile of its possessions, and on top of each pile the men deposited their sealing weapons, useless for the life on land. I myself cached nearly all my provisions—pemmican, rice, oatmeal, hard bread, and tea sufficient to last me about a month; only a little tea and cornmeal I retained on my sled, to ease the transition from the "balanced" diet of

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593 Ikpuck's longing for a son. So their home life was complete.

[152] Nevertheless the Tormiat woman disturbed Ice-house's peace of mind. She shrank from remaining in the same camp with her rival, and entreated Ikpuck to lead back our party to the Lake of Dancing. Ikpuck consulted me, and we agreed to depart on the morrow.

574 535 The natives from the Great Sound joined us in a dance of farewell, and we started on the homeward march.

372 The snow was melting everywhere, and the women, skirting the ridges, filled their bags with dryads to cook our evening meal. We wandered along like bees, sipping at every thimbleful of water that collected [137] in the cracked soil. A few pink saxifrages were open-[136] ing out their blossoms, and Lapland longspurs sang gaily all around. My companions laughed and chattered as, marching steadily, we re-entered the Colville Hills. But when we approached a knoll slightly higher than the others Ikpuck raised his voice and wept 765 shrilly. Yonder, on its crest, lay the bleaching bones of his only brother who had died six years before; and of all his family he alone remained. The whole train wailed aloud in sympathy, the hills echoed their cries, and the frightened longspurs crouched silent in the moss. Slowly our gloomy procession trailed past the fatal site; but when it lay far behind us my companions ceased their wailing and filled the air again with cheerful laughter.

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Photo by J. J. O'Neill.

The caribou, or reindeer, is the camel of the Arctic.

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Photo by G. H. Wilkins.

The men amused themselves at archery.

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winter sealing-grounds. They needed its fur for clothing, seven whole skins making only a single costume that lasted at the most three years; so they slaughtered bulls, cows, and calves, took the hides, the sinew, the back fat, and what little meat they could carry, and abandoned the rest to the wolves and foxes. Such indiscriminate destruction might have been branded as foolish, even criminal; but when white men have unconsciously exterminated the buffalo by similar methods, how can we expect a primitive people like the Eskimos to make regulations for the preservation of their game? After all, no regulations were necessary as long as their only weapons were bows and arrows, which exacted too light a toll to cause any diminution in the herds of caribou that returned to their Arctic grazing-grounds year after year. Only if conditions changed, if the natives became armed with the deadly magazine rifles of our modern civilization, would there be any reason for limiting the number a hunter might kill, or prohibiting the slaughter of females and young.

As we wandered southward, every eye in the party was strained for the sight of caribou. We secured our first trophy where the hills merged gently into the plain, and gave our dogs the feast for which they had hungered many weeks. From here on, patches of dwarf willow and heather, the fuel we had lacked so sorely in the hills, alternated with meadows of lichens and moss, or with wide stretches of stony ground

Almost devoid of vegetation.

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solitary vigil, it certainly left no traces in her appearance or mode of greeting. Her people, unlike other Eskimo tribes, never voluntarily abandoned the aged and infirm to die of cold and starvation, but prolonged their closing years with loving care. Parents and children were united by tender bonds that neither time nor distance dissolved. I once witnessed the chance meeting of an old woman with her middle-aged son who had been living in a remote tribe for many years; the stalwart hunter knelt in the snow at her feet, and, as she raised her jacket, reverently touched with his lips the breast that had nourished him in childhood.

A little north of our camp, Bad Creek cut through an outcrop of dolomite, forming a narrow S-shaped cañon a quarter of a mile long and forty feet deep. The locality was very familiar to my companions. From a ledge just under the brow of the cliff we dropped our hooks into a deep pool, and in a few hours hauled out seven large trout. (Whether any trout remained in the pool all winter, or whether they ascended to a lake before the freeze-up, I do not know; above and below there was less than three feet of water in the stream, which would freeze to the bottom before Christmas.) A gravel beach at the outlet of the cañon contained numerous pebbles of iron pyrites, used by the natives for striking fire; and a neighbouring meadow was white with the seeds of the cotton-grass that supplied both tinder and wicks for the lamps. The

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women and children gathered large quantities of these seeds, stuffing them into small bags of the strangest varieties and materials. Some were worn-out stockings of squirrel or caribou fur; two were made from the membranes that had lined the hearts of our polar bears; but the most curious of all were bottle-shaped pouches sewn from the webbed feet of red-throated loons. Whatever their shape, all alike found their way into the dog-packs, where they added one more item to our varied impedimenta.

Our loads had increased considerably since those early days in August when, leaving the hills, we had commenced this ceaseless quest of caribou. Icehouse, it is true, had no longer two small puppies tearing at the back of her hair while ostensibly nestling in the hood of her jacket; they were sturdy urchins now, able to keep pace with the other dogs and to steal the meat from our packs. But in addition to her usual burden she carried fifteen pounds of tallow, her share of the caribou back fat that the women had boiled down for ease of transport. Each man had several green caribou hides rolled round his pack, and Ikpuck and The Runner bore the two bear skins, which alone weighed upward of fifty pounds. My own pack was unchanged save for two extra caribou hides, and an increase in the thickness of my herbarium from two inches to six.

Late one afternoon, as we skirted the edge of a lake, we came to an old camping-site where a woman's knife,